

RPR:IGL
58169/6/1
25 March 2026

Chasecrown
5/26 The Parade West
KENT TOWN SA 5067

Attention: Mr T Podobny

Dear Sir,

24-25 SOUTH ESPLANADE GLENELG STAGE 1 ENVIRONMENTAL NOISE ASSESSMENT ACOUSTIC SERVICES

BESTEC Pty Ltd has been engaged to assess the noise impact to the adjacent noise sensitive receivers and within the proposed development associated with the operation of the proposed roof-mounted mechanical plant and basement fan units serving the proposed development at 24-25 South Esplanade, Glenelg SA 5045. This document presents the proposed acoustic design criteria, the results of our assessment and recommendations to achieve the required design criteria.

References

The following documents have been referenced within the preparation of this acoustic letter.

- [1] SA Environment Protection (Commercial and Industrial Noise) Policy 2023.
- [2] SA Planning and Design Code, 2025.
- [3] Indicative noise factors guidelines for the Environment Protection (Commercial and Industrial Noise) Policy 2023.
- [4] Preliminary architectural drawings by Chasecrown Pty Ltd dated 25 March 2026.
- [5] BESTEC mechanical services spatial drawings dated February 2026.
- [6] AS/NZS 2107:2016 "Acoustics – Recommended design sound levels and reverberation times for building interiors".
- [7] BESTEC fan selection and specifications dated March 2026.

Site Description

The proposed multi-storey residential development is located in a zone designated Urban Neighbourhood (UN) as per the SA Planning and Design Code [2] with the following boundaries:

- North, East and South – residential developments;
- West – The Esplanade and public domain.

Proposed Development

The proposal includes the construction of a new residential apartment buildings on 24-25 South Esplanade, Glenelg SA 5045 having the following components:

- B03 to B01 – Car parks, services;
- Level 1 – Apartments, Lobby, Mail room, Waste room;
- Level 2 to 5 – Apartments;
- Roof – Mechanical services roof plant and solar panels;

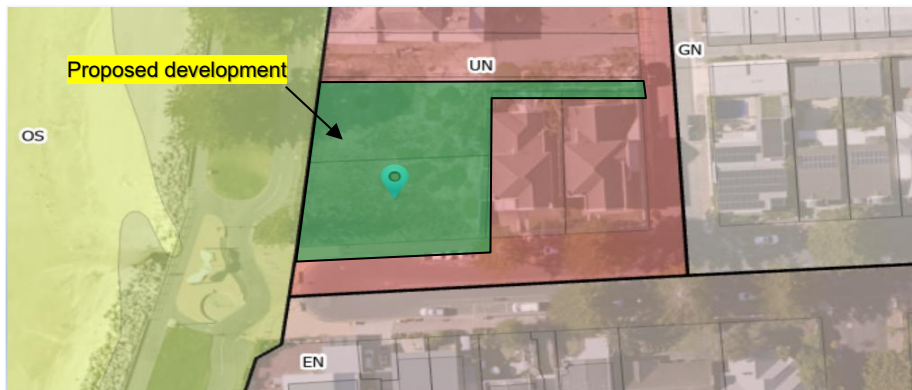


Figure 1: Site location and land zoning (reproduced from SAPPA)

Conditions

The SA Planning and Design Code [2] sets the Desired Outcome (DO) for developments, which might affect sensitive receivers in adjacent areas as follows:

DO 1 Development is located and designed to mitigate adverse effects on or from neighbouring and proximate uses.

The following requirements (performance outcomes) of the SA Planning and Design Code [2] are relevant to the design and siting of the proposed developments (Section Interface Between Land Uses):

PO 1.1 Sensitive receivers are designed and sited to protect residents and occupants from adverse impacts generated by lawfully existing land uses (or lawfully approved land uses) and land uses desired in the zone.

PO 1.2 Development adjacent to a site containing a sensitive receiver (or lawfully approved sensitive receiver) or primarily intended to accommodate sensitive receivers is designed to minimise adverse impacts.

PO 4.1 Development that emits noise (other than music) does not unreasonably impact the amenity of sensitive receivers (or lawfully approved) sensitive receivers.

PO 4.2 Areas for the on-site manoeuvring of service and delivery vehicles, plant and equipment, outdoor workspaces (and the like) are designed and sited to not unreasonably impact the amenity of adjacent sensitive receivers (or lawfully approved sensitive receivers) and zones primarily intended to accommodate sensitive receivers due to noise and vibration by adopting techniques including:

- a) locating openings of buildings and associated services away from the interface with the adjacent sensitive receivers and zones primarily intended to accommodate sensitive receivers.*
- b) when sited outdoors, locating such areas as far as practicable from adjacent sensitive receivers and zones primarily intended to accommodate sensitive receivers.*
- c) housing plant and equipment within an enclosed structure or acoustic enclosure.*
- d) providing a suitable acoustic barrier between the plant and / or equipment and the adjacent sensitive receiver boundary or zone.*

Design Criteria

Environmental Noise

Continuous Noise

This criterion will be relevant to noise emitted from the proposed development resulting from operation of engineering services plant, car park, deliveries, rubbish collections etc.

As the Deemed-to-Satisfy/Designed Performance Feature (DTS/DPF 4.1) refers to compliance with relevant Environment Protection (Commercial and Industrial Noise) Policy criteria, the environmental noise assessment has been conducted against the criteria set by the Environment Protection (Commercial and Industrial Noise) Policy 2023 [1].

The SA Environment Protection (Commercial and Industrial Noise) Policy 2023 [1] sets out the maximum allowable continuous noise in terms of A-weighted Equivalent Continuous Noise Level (L_{Aeq}) based on the time of day and zoning / use of land in which the noise source and receiver are located. With reference to the SA Planning and Design Code [2], we note that the proposed development is located within the Urban Neighbourhood zone which is essentially a mixed-use zone comprising a mixture of residential, commercial and light industry uses. Table 1 shows the indicative noise factors based on time of day and land-use as stipulated in Indicative factors guidelines for the Environment Protection (Commercial and Industrial Noise) Policy 2023 [3].

Zone	Land Use Category	Day Time (07:00 to 22:00)	Night Time (22:00 to 07:00)
Urban Neighbourhood	Residential	57	50

Table 1: Indicative noise factors based on time of day and land use

The Environment Protection (Commercial and Industrial Noise) Policy 2023 [1] determines the appropriate indicative noise levels for noise sources based on the principal land uses of zones and subzones within the SA Planning and Design Code [2]. In addition, the Environment Protection (Commercial and Industrial Noise) Policy 2023 [1] states that the predicted continuous noise due to the proposed development (for application for development authorisation) should not exceed the indicative noise level, minus 5dBA. Based on the indicative noise levels set for the proposed development, minus 5dBA for planning purposes, the applicable day and night time noise criteria would be as follows:

- Day time (7:00 a.m. to 10:00 p.m.): 52dBA
- Night time (10:00 p.m. to 7:00 a.m.): 45dBA

Note that if noise emitted by the proposed development contains any tones, modulation, impulsive or low frequency characteristics, the continuous noise level of the noise source must be adjusted as follows:

- Noise containing 1 characteristic – 5dBA penalty added to source continuous noise level;
- Noise containing 2 characteristics – 8dBA penalty added to source continuous noise level;
- Noise containing 3 or 4 characteristics – 10dBA penalty added to source continuous noise level.

Noise Intrusion

Continuous Noise

This criterion is related to noise emissions from continuously operating external sources like traffic, engineering services plant or other machinery.

AS/NZS 2107-2016

AS/NZS 2107-2016 “Acoustics – Recommended design sound levels and reverberation times for building interiors”[6] sets the criteria for background noise in terms of A-weighted equivalent continuous sound pressure level over the measurement interval ($L_{Aeq,T}$) in accordance with the use of the spaces and the location of the buildings. Table 2 details the subjective response of individuals to the proposed privacy ratings for interpretation of the recommendations.

Average Sound Pressure Levels (dBA)	Subjective Rating
35 – 40	Audible but unobtrusive
40 – 45	Moderate but unobtrusive
45 – 50	Unobtrusive with low levels of surrounding activities
50 – 55	Unobtrusive with high levels of surrounding activities

Table 2: Subjective ratings for various average sound pressure levels

Building Acoustics

Recommendations for background noise for each space are provided in Table 3 in terms of an averaged A-weighted sound pressure level (L_{Aeq}) according to the requirements of AS/NZS 2107-2016 [6].

Type of occupancy/activity	Background Noise L_{Aeq} , dBA
<i>Apartments</i>	
Bedrooms	35 – 40 (night time)
Living/ Other Habitable areas	35 – 45 (night time)
<i>Communal Component</i>	
Office	40 – 45
Lobby	<50
Waste Room	<55
Mail Room	45 – 50
Carpark	<65
Comms	<50
Main Switch/Hydraulic Services/Fire Pump	N/A

Table 3: Proposed building acoustic design criteria

Mechanical Services

Specifications and Assumptions

The assessment was based on the mechanical services specifications and manufacturer's data [5] as summarised below:

- Outdoor air-conditioning units – Based on our review of the architectural drawings [4] and mechanical services spatial drawings [5], we note that 11 outdoor air-conditioning units (model RZQS160) are proposed to be installed on the building's roof.

Daikin Model	Mode	Octave Band Centre Frequencies Sound Pressure Level, dB re 20mPa								
		63	125	250	500	1K	2K	4K	8K	Total, dBA
RZQS160	Heating	58	59	59	58	53	49	43	37	59
	Cooling	59	56	56	56	52	48	41	39	57

Table 4: Sound Pressure Levels (dB re 20 μ Pa) at 1m used in the assessment

- Fans – The sound power level of the fans used in our assessment as presented within Table 5 below:

Fan Model	Unit Designation	Mode	Octave Band Centre Frequencies Sound Power Level, dB ref 1pW.								Overall SWL, dBA
			63	125	250	500	1k	2k	4k	8k	
AP0804CP6/23	CPEF B-1	Inlet	87	90	85	85	85	81	78	73	94
		Outlet	87	90	84	84	85	81	77	73	94
AP0804CP6/23	CPSAF B-1	Inlet	87	90	85	85	85	81	78	73	94
		Outlet	87	90	84	84	85	81	77	73	94
AP0906CP12/32	SPF B-1, SPF B-2	Inlet	83	82	87	86	81	77	74	68	92
		Outlet	86	84	88	86	82	79	76	72	93

Table 5: Fans - Sound Power Levels (dBA) used in the assessment

Assessment and Recommendations

Airborne Noise

The results of our assessment of the noise emissions associated with the fan operation are summarised in Table 6 below.

Unit Designation	Fan Model	Intake	Discharge	Casing
CPEF B-1	AP0904CP9/26	(2)	(2)	(1)
CPSAF-1	AP0904CP9/24	(2)	(2)	(1)
SPF B-1, SPF B-2	AP0904CP9/33	(2)	(2)	(1)

Table 6: Summary for Acoustic Treatment for Fans

- (1) No further treatment required.
 (2) Attenuator required, please refer to APPENDIX A for selection schedule and specification.

Environmental Noise

Noise Associated with Roof Mounted Mechanical Services Units

The noise impact resulting from operation of the roof mounted mechanical services¹ units were assessed based on the sound levels summarised below.

We predicted the incident noise levels at the nearest noise sensitive receiver (Saltram Towers, 20 Oldham St) from the simultaneous operation of 11 outdoor air conditioning units and assessed it against the stipulated environmental noise criterion. We note the presence of 1,600mm high (measured from the roof plant floor level) fibre cement² enclosure as indicated in the architectural drawings [4] with a gate at each side for maintenance purposes. The results of the environmental noise assessment with the noise contribution from source to the receiver are summarised in Table 7 below.

Noise-sensitive receiver	Night time criterion, dBA	Noise level at receiver, dBA	Conclusion
Saltram Towers	45	40	Complies

Table 7: Calculated noise level at receiver

Noise Associated with Fans

We assessed the noise impact of the fan operations at the nearest noise sensitive receivers (residential dwellings on Pier Street and Saltram Towers). The assessment¹ reveals that, with the treatment nominated in Table 6 in place, the predicted incident noise level at the boundary of the resident will achieve the stipulated environmental noise criteria set out by Environment Protection (Commercial and Industrial Noise) Policy 2023 [1].

¹ Please note the assessment should be updated with revised selections of mechanical services and fan units.

² We have considered FC sheet with minimum surface mass of 12kg/m².
 117273b

Noise Intrusion

We calculated the internal noise levels in the level 5 apartments taking into account the simultaneous operation of 11 roof mounted air conditioning units (RZQS160), and assessed it against the internal noise level criteria for habitable spaces of apartments as specified in AS/NZS 2107:2016 [6] (refer Table 3). The architectural drawings indicate concrete slab for the roof, and we have considered 150mm concrete slab roof in our assessment. Our assessment revealed that the combined noise levels from outdoor air conditioning units will be within the recommended internal noise level criteria in accordance with AS/NZS 2107:2016 [6].

Conclusion

Our assessment reveals that the noise emissions from the proposed mechanical services roof plant and fan units achieves the stipulated environmental noise criterion at the nearest noise sensitive receivers and the nominated noise intrusion criteria with the proposed acoustic treatment in place.

We trust the above is satisfactory and would be pleased to further advise as required.

Yours faithfully,



RAHUL PRAKASH
ACOUSTIC SERVICES ENGINEER
BESTEC PTY LTD

APPENDIX A
ATTENUATOR SPECIFICATIONS

Unit	Description	Air Vol.	Max. Press. Drop (Pa)	Dimensions	Minimums Static Insertion Loss (dB re 20μPa) Frequency (Hz)							
		(m ³ /s)		W x H x L (mm)	63	125	250	500	1k	2k	4k	8k
SPF B-1 & SPF B-2	Intake	8	3	2D	5	8	13	22	19	13	12	10
SPF B-1 & SPF B-2	Dischg	8	3	2D	5	8	13	22	19	13	12	10
CPEF B-1	Intake	6.5	3	2D	5	8	12	22	23	16	15	10
CPEF B-1	Dischg	6.5	3	2D	5	8	12	22	23	16	15	10
CPSAF B-1	Intake	6.5	3	2D	5	8	12	22	23	16	15	10
CPSAF B-1	Dischg	6.5	3	2D	5	8	12	22	23	16	15	10

Figure A 1: Attenuator specifications

